AMENDMENT(S) TO THE CLAIMS

Please amend claims 1-16, 18 and 19, cancel claims 17 and 20, and add new claims 21 and 22 as follows. This listing of claims will replace all prior versions and listings of claims in this application:

Listing of Claims:

1. (Currently amended) Crane or excavator for the transaction of a load, which ~~is carried by~~ comprises:

a) a load cable ~~with~~ for carrying the load,

b) a turning mechanism for the rotation of the crane or excavator,

c) a seesaw mechanism for the erection or incline of an extension arm and

d) a hoisting gear for the lifting or lowering of the load which is carried by a cable with an actuation system,

said crane or excavator being further characterized by

e) a track control system (31), whose starting points (u_{outD}, u_{outA}, u_{outL}, u_{outR}) go directly or indirectly into ~~the~~ a control system (41) for controlling the position and/or speed of the crane or excavator as input values for position or speed of the crane ~~(41)~~ or excavator, whereas ~~the~~ set points for the track control system (31) ~~in the track control~~ are generated ~~in such a way, that a~~ for moving the load ~~movement results from it~~ with minimized oscillation amplitudes.

2. (Currently amended) Crane or excavator in accordance with claim 1, ~~characterized by the fact that the~~ wherein the track control system 31 includes a model based optimal control trajectory ~~inside the track control system (31) can be~~ which is calculated and updated in real time.

3. (Currently amended) Crane or excavator in accordance with claim 2, ~~characterized by a~~ wherein the model based optimal control trajectory is based on a model which is linearized by reference trajectories.

4. (Currently amended) Crane or excavator in accordance with claim 2, ~~characterized by a~~ wherein the model based optimal control trajectory is based on a non-linear model approach.

5. (Currently amended) Crane or excavator in accordance with claim [[1]] 2, ~~characterized by a~~ wherein the model based optimal control trajectory ~~with~~ includes feedback of all status values.

6. (Currently amended) Crane or excavator in accordance with claim [[1]] 2, ~~characterized by a~~ wherein the model based optimal control trajectory ~~with~~ includes feedback of at least one measured variable and estimation of the remaining status values.

7. (Previously presented) Crane or excavator in accordance with claim [[1]] 2, ~~characterized by a~~ wherein the model based optimal control trajectory ~~with~~ includes feedback of

at least one measured variable and set point tracking of the remaining status values by model based feed forward control.

8. (Currently amended) Crane or excavator in accordance with claim [[1]] 2, ~~characterized by the fact that~~ wherein the track control system (31) ~~can be~~ is implemented as fully automatic or as semi-automatic.

9. (Currently amended) Crane or excavator in accordance with claim 1, ~~characterized by the fact that~~ wherein a set point matrix (35) for position and orientation of the load ~~can be~~ is entered as an input value into the track control system (31).

10. (Currently amended) Crane or excavator in accordance with claim 1, ~~characterized by the fact that~~ wherein the set point matrix (35) ~~consists of~~ comprises a start point and arrival point.

11. (Currently amended) Crane or excavator in accordance with claim 1, ~~characterized by the fact that the~~ wherein a desired arrival speed of the load ~~can be~~ is entered into the track control system (31) by the position of the hand lever (34) in case of a semi-automatic operation.

12. (Currently amended) Crane or excavator in accordance with claim 11, ~~characterized by the fact that the~~ wherein measuring values of the positions of crane and load ~~can be~~ are

measured via sensors and entered into the track control system (31) in case of a semi-automatic operation.

13. (Currently amended) Crane or excavator in accordance with claim 11, ~~characterized by the fact that the~~ wherein positions of crane and load ~~can be~~ are estimated in a module for model based estimation processes (43) and ~~can be~~ entered into the track control system (31).

14. (Currently amended) Crane or excavator in accordance with claim 1, ~~characterized by the fact that the output~~ wherein the values (u_{outD}, u_{outA}, u_{outL}, u_{outR}) are entered first into an underlying control system with load oscillation damping.

15. (Currently amended) Crane or excavator in accordance with claim 14, ~~characterized by the fact that~~ wherein the load oscillation damping system has at least one track planning module, one centripetal force compensation device, one axis controller for the turning mechanism, one axis controller for the seesaw mechanism, one axis controller for the hoisting gear and one axis controller for the turning mechanism.

16. (Currently amended) Crane or excavator in accordance with claim 1, ~~characterized by the fact that~~ wherein the movement of the load can be specified in such a way by the track control system (31), that pre-determined free areas cannot be left by the oscillating load.

17. (Canceled)

18. (Currently amended) Crane or excavator in accordance with claim 3, ~~characterized by~~ a wherein the model based optimal control trajectory ~~with~~ includes feedback of all status values.

19. (Currently amended) Crane or excavator in accordance with claim 4, ~~characterized by~~ a wherein the model based optimal control trajectory ~~with~~ includes feedback of all status values.

20. (Canceled)

21. (New) Crane or excavator for the transaction of a load, which comprises:

a) a load cable for carrying the load,

b) a turning mechanism for the rotation of the crane or excavator,

c) a seesaw mechanism for the erection or incline of an extension arm and

d) a hoisting gear for the lifting or lowering of the load which is carried by a cable with an actuation system,

said crane or excavator being further characterized by

e) a track control system (31) which calculates control voltages (u_{StD}, u_{StA}, u_{StL}, u_{StR}), wherein starting points (u_{outD}, u_{outA}, u_{outL}, u_{outR}) of the control voltages go directly or indirectly from the track control system (31) into a control system (41) for controlling the position and/or speed of the crane or excavator) as input values for position or speed of the crane or excavator,

whereas set points for the track control system (31) are generated for moving the load with minimized oscillation amplitudes.

22. (New) The crane or excavator of claim 21 wherein the track control system (31) includes a model based optimal control trajectory which is calculated and updated in real time.